

10220 - 10325

THE SPIRAL



NOTE BOOK

200

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10¢

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for return to

Dr. Arthur Cronquist
New York Botanical
Garden

Bronx, New York
10458

U. S. A.

10220 - September 26, 1965

Chihuahua, Mexico:

Swale in sand dunes

6 miles south of Samalayuca and 38 miles south of Juarez.

Plants annual. Rays

4-8, mostly 5 or 8, rich lavender-pink, stipitate-based, deeply trifid.

Elevation about 4400 feet.

Palafolia sphacelata

~~(Nutt.) Cory~~

(Nutt.) Cory

v. 587

Palafolia 16

10221 - Sept. 21. 1965

Chihuahua, Mexico.

Sama Desert 36 miles
south of Samalayuca
and 68 miles south of
Juarez. Elevation about
4100 feet. Plants
abundant. Heads yellow.
Rays mostly 8, sometimes
10.

Pectis papposa Harv. + Gray

Pectis (15)

10222 - Sept. 27, 1965

Chihuahua, Mexico. Rocky, felsitic east slope in desert grassland (above the Larrea Zone), ~~miles north of Parrita and~~ 56 miles north of Chihuahua. Elevation about 5100 feet. A single much-branched shrub nearly 1 m. tall. Leaves indiscriminately opposite or alternate. Heads yellow, with 7-10 (mostly 8) rays.

Visuiera cordifolia Gray

Visuiera (16)

10223 - September 28, 1965
Chihuahua, Mexico, ~~Desert~~
Same place as 10222.

Stems loosely clustered
on a fibrous-rooted base.
Corollas and styles
blue-lavender.

Ageratum



corymbosum Zuccagn.

Ageratum

(14)

10224 - September 27, 1965
Chihuahua, Mexico.
Desert grassland (above the
Larrea zone), ~~miles~~
~~north of Parí and~~
56 miles north of Chihua-
hua. Elevation about 5100
feet. Rays 21-35, white
on top, pink-lavender
beneath. Disk yellow,
Aphaenostephus arizonicus
Gray
rel eff. (1) ✓
✓
Achastogonium (15) 21-35 ✓

10225 - Sept. 27, 1965

Roadside weed in desert
grassland (above the Santa
Zane), miles north of
~~Pasmita~~ and 56 miles north
of Chihuahua, Chihuahua,
Mexico. Elevation about
5100 feet. Selected
small specimens. Larger
plants more freely branched,
leafy to near the top.
Heads yellow. Rays 32-58,
in several series, becoming
reflexed in age.

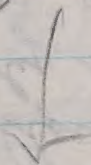
Baileya pleniradiata Harv. & Gray

Baileya pleniradiata (6)

10226. September 27, 1965

Chihuahua, Mexico.

Desert grassland 35 miles
north of Chihuahua.



Elevation about 5300'.

Shrubs mostly 4-7 dm. tall.

Heads yellow. Rays 7-16,
mostly 8 or 13.

Senecio longilobus Benth. ✓



10226 4

Senecio (16)

10227- Sept. 28, 1965

Chihuahua, Mexico.

On west-facing, rocky,
alluvial slope overlooking
a dry wash, with acacia
and other desert shrubs,
about 23 miles southeast
of Chihuahua. Elevation
about 5000 feet. Leaf
shrubs about 5 dm. tall.
Heads yellow. Rays 13-17,
relatively short.

Zexmenia brevifolia ✓

A. Gray ✓

Zexmenia brevifolia (f)

10228 - Sept. 28, 1965

Chihuahua, Mexico

Moist swale along the
roadside, 45 miles south-
east of Chihuahua and 2
miles northwest of Meoqui

Elevation about
3800 feet. Plants colonial
by rhizomes with scat-
tered stems. ~~Heads~~ Heads
yellow. Rays relatively num-
erous, mostly 10-16

Solidago scabrida DC.

Solidago affinis (15)

10229 - Sept. 28, 1965
Same place as 10228.

Plants spreading below
ground, with widely
scattered stems. Disk
yellow. Rays 14-24,
lavender.

Aster pauciflorus Nutt.

11

Aster (7)

10230 - Sept. 28, 1965

Same place as 10228.

Stems solitary or
loosely clustered, brown
well developed
creeping rhizomes.
Corolla and styles
blue-lavender.

Eupatorium betonicifolium

Mill. ✓

Eupatorium 15

10231 - Sept. 28, 1965

Same place as 10228

Plants shallow-rooted
annuals. Flowers
rather light yellow.
Selected small speci-
mens; larger plants
up to about 1 m. tall
and nearly as broad.

Flaveria trinervia ✓✓
(Sprengel) Mohr.

Flaveria (15)

10232 - Sept. 28, 1965
Same place as 10228.
Stems clustered on a
perennial root. Stems
and leaves conspicuously
glaucous. Involucre
greenish-yellow.
Flowers yellow.

Flaveria chloraefolia Gray

✓

Helianthus (15)

10233 - Sept. 26. 1963
Chihuahua, Mexico
With acacia and other
desert shrubs in Larrea
Zone in the desert between
Pamargo and Jimenez,
22 miles south of
Pamargo. Elevation
about 4400 feet.

Shrubs up to about 1
m. tall, glabrous and
glutinous. Heads
discoid, yellow.
Selloa glutinosa Spreng.

152

Selloa sp.

(15)

10234 - Sept 29, 1965
Chihuahua, Mexico
With acacia and other
desert shrubs around a
rocky, pisolitic knoll in
the desert about 16 miles
west-southwest of
Jimenez. Elevation about
5100 feet.

Shrubs 4-8 dm. tall.
Heads dull white, with
mostly 5 minute white rays.
Parthenium incanum H.B.K.
✓ ✓

Parthenium (15)

16235 - Sept. 29, 1925

Chihuahua, Mexico.

Roadside weed in
thorn-desert country
7 miles east of Parral.
Elevation about 5700'.

Plants strictly annual.
Heads whitish, with 5
small white rays.

Parthenium bipinnatifidum
(Ortega) Rollins

Parthenium sp. (15)

10236 - Sept. 29, 1965

Chihuahua, Mexico.

Moist soil around a
water-hole in thorn-
desert country 9 miles
east of Parral. Elevation
about 5700'. Plants

shallow-rooted annuals.

Rays mostly 5, the
basal half orange, the
distal half yellow.

~~*Parthenocissus*~~ (2)

Bidens ferulaefolia
(Jacq.) DC.

Conyza (16)

10237. Sept. 29, 1965

Same place as 10236

Plants odorless. Heads
yellow. Rays short, mostly
about 8, or only 5 on
smaller heads.

Dyssodia papposa (Vent.)
Hitchc.

Tag. tab. (15)

10238 - Sept. 29, 1965

~~Disturbed soil~~

Chihuahua, Mexico.

Disturbed soil along
the roadside in thorny
desert country 9 miles
east of Parral. Elevation
about 5700'. Plants
annual. Ray narrow,
persistent, (4)5-13,
depending on the size
of the head.

Zinnia peruviana (L.) L.

✓
✓

Zinnia p. (3)

10239 Sept 29, 1969
Chihuahua, Mexico.

Same place as 10238
Disk dark. Rays
yellow, 10-13, after
13.

Sanvitalia procumbens ✓
Lam.

- Same place

⑨ ✓

10240 - Sept. 20, 1965

Chihuahua, Mexico

Same place as 10238

Heads bright orange.

Rays mostly 13, or on
smaller heads as few
as 8.

Dyssodia porophylla (Cav.)
Cav.

ssp. *cancellata* (Cass.)

Struth.

var. *cancellata* (Cass.) Struth.

Dyssodia cancellata (3)

10241 - Sept. 23, 1966
Chihuahua, Mexico
Amongst creosote and
other thorny shrubs in
the desert 9 miles east
of Pinal. Elevation
about 5700'. Heads yellow
Sept 3-21, persistent,
becoming reflexed.

Hymenoxys scaposa
(DC.) Parker



229

Hymenoxys

(5)

10242 - Sept. 30, 1965

Chihuahua, Mexico.

In thin soil of ledges on
volcanic outcrops in
desert savanna land
27 miles south of Parral
and 10 miles south of
Villa Matamoros.

Elevation about 5700'.
Heads yellow, with 2-3
short rays.

Heterospermum pinnatum
Cav. ✓

Taglioid - 2 specimens 113

12745. Sept. 30. 1925

Same place as 10742.

Plants strongly
licorice-scented.

Disk yellow. Rays 0-2
on different heads even of
the same plant. Short,
white. Disk corollas
mostly 4-lobed, some 5-lobed.

Tagetes micrantha Cav.

Tagetes 0. subv. x

(16)

52111 - Sept. 30, 1965
Same place as 10242
Disk orange. Rays mostly
5, bright yellow, with a
deeper orange spot at the
base. Rays fertile, their
receptacles compressed

Zinnia tenella B.L. Robins.

✓

✓

Yellowish

(15)

1007 - Sept. 21, 1955
Chihuahua, Mexico. In
thin soil around false
outcrops in desert savanna
land; also a roadside wild.
27 miles south of Parral,
and 10 miles south of
Villa Matamoros. 5700'

Phyllaries green with
purple tips. Heads yellow,
~~the~~ disciform, with a
single inconspicuous
pistillate flower and several
disk flowers.

Schkuhria onthemoidea Coult.

(Helminth)

(10) ✓

10246 - September 30, 1964
Chihuahua, Mexico. Pockets
of soil in crevices East-facing
helvetic outcrops in desert
savanna. Land 10 miles
south of Matamoros and
27 miles south of Pánuco.
Elevation about 5700'.
Delicate annuals with
thin, soft leaves, Flowers
white, very faintly
lavender-tinted.

Stemodia micrantha Lag.

Stemodia (16)

10246 / - Sept. 30, 65.

Chihuahua, Mexico. Same
Place as 10246. Disk
yellow. Rays 5, white,
very short.

ray achenes epappose,
pappus of disk achenes consisting
of 18-19 oblanceolate ~~thin~~
scales, distally fimbriate.

Galinosa semicalva ✓
(Gray) St. John + White

Galinosa semicalva ⑨ ✓

10248 - September 30, 1965

Chihuahua, Mexico.

Groves in east-facing
felsitic rock outcrops
in desert savanna land
10 miles south of Villa
Matamoros and 27 miles
south of Parral. Elevation
about 5700 feet. Loosely
branched, slender-stemmed
shrub about 1 m. tall.

Gladsyellian, with mostly
B rays. Chromosome no. det
by R.C. Jackson as $n = 17$.

Viguiera cordifolia Gray ✓

Viguiera (5) - *occidentalis*? ✓

0249. *Perezia*
Grown at the base of felsite
on each outcrops in desert
savanna land 10 miles
south of Villa Matamoros
and 27 miles south of
Parral. Chihuahua, Mex.
Elevation about 5700'.
Stems loosely clustered
on a fibrous-rooted caudex,
and bearing tufts of brown
wool at the base. Flowers
pink-purple.

Perezia thurberi Gray

Perezia (7, incl. 1 shot 1,
1 shot 2)

10250

Perymenium
mendezii DC.

var. *mendezii*



10250 Sept. 30, 1965

Chihuahua, Mexico. ✓
Same place as 10249.
Shrubs mostly 4-8
in. tall. Heads
single flower - yellow,
with 7-9 rays.

(1) ✓

711

Echinacea ?

(16)

10251 October 1, 1965

Durango, Mexico.

Grassy savanna - country
23 miles southeast of
Las Alamos and 70 miles
southeast of Farmington.

Elevation about 6000 ft.
Stems clustered and stout
tapering and branched
erect, ascending or
suberect. Ray mostly 8,
brown-yellow (paler
than sunflower yellow).

Berlandiera lyrata Benth.

var. *lyrata* Pinkava

Berlandiera (7)

10252 - October 1, 1965

Durango, Mexico.

Same place as 10251.

Stems loosely clustered.
Plants tending to spread
by creeping roots. Heads
yellow, the rays mostly
about 13, a little paler
than the disk, soon de-
ciduous.

Bahia absinthifolia Benth

10253 - October 1, 1951
Durango, Mexico
Same place as 10251.
Plants annual from a
short taproot. Heads
lemon-yellow. Rays mostly
about 13.

Gutierrezia glutinosa
(Schauer) Schultz Bip.
✓

✓

Heisteria ? (15)

1025 - October 1, 1965

Durango, Mexico.

In rocky alluvium along a
dry wash in grassy
savanna country 23 miles
southeast of Las Alamos
and 70 miles southeast of
Parral. Elevation about
6000 feet. Woody-based
herbs or semi-shrubs with
thickened stems. Leaves variable
in width on different plants, some-
times some of them subtrilobed.
Hairs confluent or yellow. Rays mostly
about 13, sometimes as few as 8, often
light orange toward the base.

Viguiera dentata (Cav.) Spreng ✓
1025 - 107

10255 - October 1, 1965

Same place as 10254.

Stems coarse, clustered
on a stout tap root and
branched caudex. Flowers
mostly 13, the corolla at
first whitish or ochro-
leucous, later dull laven-
der.

Brickellia scoparia (Dc.) Gray

✓

Brickellia (10)

10256 - October 1, 1925
Durango, Mexico, Sonora,
sandy alluvium, at the edge
of a dry wash in grassy
mountain country 23 miles
southeast of Las Vigas and
70 miles southeast of
Parral. Elevation about
6000 feet. ^{5 dm tall} Plant with a
single stout, much branched
stem from a coarse appar-
ently perennial root; stems
specimens all from the single
plant stem. Corolla pure white.
Rays 2. Anthers yellow.
Guardiola arguta (Gray) Robins.
* *Guardiola* ?

1257. October 1, 1925
Durango, Mexico. In rocky
sandy alluvium along a dry wash
in grassy savanna land 23
miles southeast of Las Vigas
and 70 miles south of
Parral. Elevation about 6500
feet. Plants annual, either
with a single erect stem or
several ascending stems.
Rays 5, the distal third yellow,
sharply limited from the
orange proximal two-thirds.
Disk orange. Pappus of 2 re-
crossed, barbed awns.
Bidens ferulaefolia (Jacq.) DC. ✓

Bidens

(10) of 10236

10258 - October 1, 1965

Durango, Mexico. Abundant
in crevices along the roadside
in grassy savanna land 15
miles southeast of Santa
Hildegarda and 95 miles
south-southeast of Durango.
Elevation about 6100 ft.
Semi-shrubs with cluster-
ed, winged stems 3-30 dm.
tall. Disk orange. Rays
orange or orange-yellow,
mostly about 13, occasi-
onally as few as 10.

Viguiera linearis (Cav.) ✓

Schultz Bip.

Viguiera

15

10259 October 1, 1955

La Durango, Mexico

La Zarca community (near
its upper limits) $8\frac{1}{2}$
miles east of La Zarca.

Elevation about 6100 feet.

Disk yellow. Rays 4-7,
most often 5, persistent,
white, sometimes becoming
lavender-tinted in age.
Stems clustered on a stout
taproot, forming broad
low mounds.

Zinnia acerosa (DC.) A. Gray

Zinnia (9)

10260 - October 1, 1965.
Same place as 10259.
Heads orange, discoid
Stems clustered on a
short taproot, forming
broad low mounds.

Dioscorea setifolia (Lag.)
Robins.

var. *setifolia*

495

Dioscorea n. sp.

(5)

10261 - October 3, 1965

Oaxaca, Mexico

In semi-desert scrub
with Acacia and tree-
cypripedium, about 17 miles
east-southeast of Oaxaca.
Felsitic substrate.

Elevation about 6200 ft.
Shrubs 1.5-3 m. tall.
Disk yellow. Rays
mostly about 8, pure
white, 1-2 cm.
long. Locally called
Santa Barbara.

Montanoa arborescens (D.C.) Schultz

Montanoa (15) Bip-
up from
pucara

10262 - October 3, 1965

Same place as 10261

Shrubs up to about 2 m. tall. Heads discoid, golden-yellow. Leaves mostly opposite, or sometimes some of them ternate, or the upper ones alternate.

Verbesina serrata Cay.
(discoid form)

Verbesina (15)

10263 - October 3, 1965
Same place as 10261
Shrubs or semi-shrubs
up to about 1.5 m tall.
Leaves firm and harsh.
Heads orange yellow,
with about 8 rays,
or sometimes fewer.
Pappus of 2 paleaceous
anthers and some short
squamellae

Viguiera cordifolia Gray ✓

Viguiera Klotzsch

(15)

10261 - October 3, 1964
Same place as 10261
Stems clustered and a
fibrous root caudex.
Leaves thin and soft,
easily wilting, mostly
opposite, or the upper
or lower nearly all of
them alternate. Rays
12, often 10, yellow,
more deeply so toward
disk. Disk yellow
Pappus of 2 paleaceous awns
and some short stiff ones
Ligustria dentata (Cav.) Spreng ✓

Vigilant 7 15

10265 - October 3, 1965
Durango, Mexico.

Disturbed felsitic soil
along the roadside about
17 miles east-south east
of Durango, in thorn-scrub
region. Elevation about
6200 feet. Plants short-
lived, but not strictly
annual. Rays 24-42,
bright pink-lavender.
Disk yellow.

Machaeranthera

gymnocephalae (DC.) Shinn.

Machaeranthera gymnocephalae

(2)

Perognathus

~~as~~ *mendenii* DC.

var. *mendenii*

10266





10266- October 3, 1965
Carrizozo, New Mexico
Same place as 10261.
Shrubs up to about 1 m.
tall. Heads yellow,
with 5-10 rather small
rays.



Grayia procumbens (15) ✓

10267 - October 3, 1964
(Ray white; disk yellow)
Same place as 10261

Erigeron delphinifolius Willd.
ssp. *neomexicanus* (Gray) Cronq.
var. *neomexicanus*



aff. *Erig. delph.* (3)

10255 - Oct. 3, 1961
Durango, Mexico.

On felsitic rock outcrops
in thorn-scrub region
about 17 miles east-
southeast of Durango.

Elevation about 6500'.
Low, broadly rounded
shrubs up to about 5 dm.
tall. Flowers white.

Stevia salicifolia Cav.

✓✓

Stevia

(15)

10269 - October 4, 1965

Zacatecas, Mexico.

In open thorn-shrub

community with

Acacia and Opuntia, on

a ridge - approx $7\frac{1}{2}$ miles

south of Villa Nueva.

Elevation about 7000'.

Small plants \pm erect;

larger ones decumbent.

Rays mostly 5, white,

deeply trilobed. Disk

yellow.

Tridax coronopifolia

(Kunth) Hemsl. ✓

Friday (15)

10270 - October 2, 1965
Same place as 10169.

Plants slightly mesophytic
Corolla. tube pale
yellowish-green, the
limb white,

Stevia micrantha Lag.

Stevia (15)

10271 - October 4, 1965

Samplings 1069.

Plants aromatic.

Ray 5, orange, marked
with vermilion near
the base. Disk orange.

Tagetes patula L. ✓✓

Tagetes (15)

10272 - October 4, 1965.

Same place as 10269.

Shrubs or half shrubs
3-10 dm. tall. Leaves
a peculiar bright
gray-green. Corolla limb
white, the tube somewhat
lavender-tinted.

Chromosome no. det. by
R. C. Jackson $n = 12$.

Stevia salicifolia Cav.

10273 - October 4, 1965

Same place as 10269.

Shrubs 1.5 - 3 m. tall.

Rays 5 - 10, often 8,
pure white, 1-2 cm long.

Dist. yellow. Large
separable leaves are from
vigorous young shoots.

Montanoa leucantha

(Lag.) Blake

Montanoa (1928)

10274 - 2074 - 4, 1965

Zacatecas, Mexico.
In open thorn-scrub
community, with *Acacia*
along a ridge $11\frac{1}{2}$ miles
south of Villa Nueva.

Elevation about 7000 ft.
Tall shrubs about 3 m
tall. Leaves opposite, or
some of them alternate,
or whorled. Hairs yellow,
with 5-10 rays. The large
leaves are from vigorous
young shoots.

Viguiera quinquerradiata

(Cov.) Gray

Viguiera

(15)

10275 - October 4, 1965
Zacatecas, Mexico.

Moist, low ground in
disturbed sites in
subtropical deciduous
forest about 21 miles
south of Jalpa.

Elevation about 4600'.

Collected small specimens;
larger plants up to
nearly 1 m. tall. Rays
8-13, yellow, very short.
Melampodium perfoliatum
(Cav.) H.B.K.

186/

Polymnia (C.)

10276 - October 6, 1965
Jalisco, Mexico: open
places in savanna region
17 miles north of

Extlahuacán del Rio, and
48 miles north of

Guadalupe. Elevation
about 5000 feet. Coarse

herbs with ascending
or sprawling to loosely
erect stems up to about 2

m. tall. Heads ¹⁻⁶ very large,
with orange disk and 13-24
yellow rays then 3.5-6 cm.

long. Pappus of 2 pale awns
and some short hairs.
Viguiera pachycephala (DC.) Hemsl.

10, incl 3 short 1,
Viguiera 3 short 2

10277 - Oct 1 - 6, 1955

Salisco, Mexico.

Along a small stream in
savanna region 17 miles
north of Ixtlahuacan de
Rios and 48 miles north
of Guadalajara. Elevation
about 5000 feet. Weak
shrubs growing up
among Acacias, tall
Opuntias and tall Spondylus
reaching a height of 3 m.

Head orange-yellow,
with mostly 11-15 rays.
Pappus of 2 paleaceous awns and
some short squamulae.

Rhysalepis palmeri (Gray) Blake

Viguiera (15)

10278 - October 6, 1955
Salisco, Mexico.
Weed around corn field
in savanna region 17 miles
north of Ixtlahuacan de
Rios, and 48 miles north
of Guadalajara. Elevation
about 5000 feet.

Stems several on a short-
lived perennial root.
Fls. orange, with
usually 5 rays.

Dyssodia tagetiflora Lag.

Tagetes (6)

10279 - October 6, 1965
Jalisco, Mexico.
Weed in corn field in
savanna country 17
miles n. of Ixtlahuacan
del Rio and 48 miles
north of Guadalajara
Elevation about 5000
feet. Bracts blood-red.

Castilleja atvensis C. & S.
Det. Noel H. Holmgren

Castilleja ①

10280 - October 6, 1965
Jalisco, Mexico. ~~Weed~~
Same place as 10278.
Ray yellow, 2-5,
most commonly 5,

Melampodium sericeum
Lag.

Annual weed. (14)

10251 - October 6, 1905

Same place as 10278.

Ray 5, very short,
yellow.

Wet - sand & low field

Pectis prostrata Cav.

Tagetoid

(3)

10253 - October 6, 1965
Tehuacan, Mexico. In
savanna country, verging
to subtropical deciduous
forest, 13 miles north of
Ixtlahuacan del Rio and
44 miles north of Guadalupe.
Elevation about 5850'.

Coarse shrubs or small
trees up to about 6 m. tall
and 4 dm. thick at the base,
rough-barked, rather
soft-wooded. Heads yellow;
ray neutral, 5, or some-
times up to 8. Leaves opposite, or
the large detached leaves smooth
(only)

Same specimen as
from Michigan young
shoots.

Viguiera quinqueradiata
(Cav.) Gray

✓

✓

Viguiera cf. 100 146 12

10253 - October 6, 1965
Tehuacan, Mexico. In open
oak-juniper woodland
9 miles north of
Tehuacan del Rio,
and 40 miles north of
Guadalupe. Elevation
about 6400'. Stems
solitary (seldom several)
and fibrous. Rooted
erect. Flowers white.
Growing with #
10284, *Stevia serrata*
Cav. and perhaps
hybridizing with it,
as suggested by some

specimens with
more hirsute stems,
but no certain
F, hybrids seen.

Stevia rhombifolia HBK.

Stevia

6

10284 - October 6,
1955 - Jalisco, Mexico,
Same place as 10283.

Stems clustered or
solitary, and
hirsute - rooted branches.
Flowers white.
Growing with #10283,
and perhaps hybrid-
izing with it, but no
certain F₁ hybrids seen.

Stevia serrata Cav.

S. rhombifolia HBK.,

10235 - October 8, '65
Jalisco Mexico, in
a seepage area in
oak-juniper wood-
land 9 miles north of
Ixtlahuacan del Rio,
and 40 miles north
of Guadalajara. Stems
solitary or several,
from a fibrous-rooted
caudex. Flowers white.

Stevia serrata Cav.

Stevia (5)

10286 - October 6, 1965,
Same place as 10285.
1 = larvae white,
Stems solitary.

Cacalia (*Odontotrichum*)
sinnuata Cerv.



712

Cacalia (2)

10267 - October 7, 1926
Aplicco, Mexico.

Sierrana country 23
miles southwest of
Guadalupe. Elevation
about 5200 feet. Stems
solitary or paired, stout,
2-3 m. tall. Basal leaves
peltate, subequally cleft
to the middle or beyond;
upper cauline leaves peltately
obovate, cleft, the others
much reduced. Flowers
white. *Cacalia* (*Psacalium*)
megaphylla Robins. + Greenm.

Cacalia (7) ✓ ✓

0288 - October 7, 1965
Jalisco, Mexico
Along fence-rows
near the south shore
of Lake Chapala, about
42 road miles south
of Guadalajara. Elevation
about 500'. Rather
soft-wooded shrubs
up to about 4 m. tall.
Rays white, mostly 5,
short. The detached
larger leaves with some
specimens are from
vigorous young shoots.
Montanoa xanthifolia Schott & Bip.
Montanoa (15)

10289 - October 7, 1951
Tehuacan, Mexico. Along
the roadside near the south
shore of Lake Chapala,
48 miles south of
Guadalupe. Elevation
about 5100'. Stems 8-20 dm
tall, clustered at the base -
rooted caudex, shrubby for
1-2 dm. at the base, and
wholly herbaceous. Leaves
opposite, but the upper ones
alternate. Disk orange.
Rays yellow, mostly about 13.
Verbesina sphaerocephala Gray
Verbesina (15) 11

10290 - October 7, 1965,
Jalisco, Mexico. ~~10290~~
along the roadside
in 0289. Plants annual
up to about 2 m. tall.
Rays yellow, commonly
about 13 or about 14.
Rich yellow, turning
red in age.

Simisia adenophora ✓
(Greenm.) Blake

Simisia (5)

10291- Potosi 7.1907
Same place as 10289.
Plants about 15 dm.
tall, shrubby toward
the base, heads yellow
with about 3 rays.

Zexmenia

ceanothifolia

Schultz Bip.

Viguiera (F)

11292 - October 7, 1965
Michoacan, Mexico.

In pockets of soil along
moist, felsitic cliffs
overlooking the southeast
shore of Lake Chapala,
4 $\frac{1}{2}$ miles east of Cojumatlan.
Elevation about 5600'.
Plants annual, single-
stemmed. Heads orange,
discoid.

Bidens bigelovii Gray
var. *pueblensis* Scherff

Bidens (3) ✓

10293 - October 7, 1965

Michoacan, Mexico

Open, thorn - brush slopes

6 miles west Sahuayo

and 6 miles east of

Cojumatlan. Elevation

about 5900'. Plants

perennial, with clustered

stems 10-18 dm tall,

appearing semi-shrubby,

but the stems apparently

dying ~~back to~~ back to the

ground each year. Heads

yellow, with (13) 16-25

rays. *Viguiera linearis*

(Cav.) Schultz

Bip.

845

Viguieroid

(15)

10294 - October 8, 1965.

Michoacan, Mexico.

Sualesin pastured

thorn-savanna in subtropi-

cal deciduous forest zone,

27 miles east of ~~Juarez~~

Jiquilpan and 10 miles

west of Zamora. Elevation

about 5600'. Rays 8 or

not infrequently 9,

deep orange, with paler,

more orange-yellow margins.

Zinnia haageana

Regel

Zinnia (16)

10295 - October 8, 1965
~~at~~ same place as 10294.
Stems up to about 2 m.
tall, clustered on a
fibrous-rooted crown,
densely brown-woolly
at the base. Flowers
white, sometimes
faintly lavender-tinted.

Perezia reticulata ✓

(Lag.) Gray

Perezia ~~(+5)~~ (16) ✓

10296 - October 8, 1965
Michoacan, Mexico.
Pastured thorn-savanna
in subtropical ~~deciduous~~
deciduous forest zone,
also a roadside weed;
27 miles east of Jiquilpan
and 10 miles west of
Zamora. Elevation
about 5600'. Heads
disciform, orange.
Both outer and inner
pappus scales dissected into
anms.

Dyssodia porophylla (Cav.) Cor.
var. *porophylla*

Dyssodioid (4)

15197 Oct 8, 1961

Michoacan, Mexico

Open place in oak
pine woodland in the
mt. 2.5 miles east
southeast of Zamora.
Elevation about 6000
ft. Rays mostly 5,
broadly notched,
deeper orange toward the
margin, more yellow
toward the center.

Tagetes heterocarpha

Rydb. ✓

Tagetes

10778 - October 8, 1965
Michoacan, Mexico.

Dry, rocky slopes in
open pine-oak woodland
in the mts. 2.5 miles
east-southeast of
Zamora. Elevation about
2500'. Plants perennial,
usually somewhat shrubby
at this age, with loosely
ascending stems. Leaves
simple or 3-5-foliate.
Ray mostly 8, purple-
striped on more lavender
background. Disk yellow.

Bidens aequisquama (Fern.) Scherff
✓

12277 - October 8 1921.
Michoacan, Mexico.
On steep, rocky (volcanic)
northeast slopes in
old pine woodland in
the mts. 25 miles east-
southeast of Zamora.
Elevation about 6600'.
Shrubs 2-3 m. tall. Leaves
yellow, about 13. Petals
maroon-orange.

Verbesina sphaerocarpa ✓
Gray

Verbesina

(15)

103 as. October 8, 1965
Michoacan, Mexico.

Same place as 10277.

Stems solitary as from
herbarium fibrous-rooted
crown. Flowers purple.

Eupatorium pulchellum
H.B.K.

Yarrowia (3)

1831 - Oct. 8. 185
Michoacan Mexico.
Lampasquero 1831.

Stems loosely ascending,
up to nearly 2 m. tall,
wholly herbaceous, or
shrubby at the base.
Leaves more or less varying from
pale green to more often
dark blackish-green.
Heads solitary, or several,
with mostly about 13
yellow rays.

Viguiera excelsa (Willd.)

Benth. + Hook. f.

Viguiera (6)



0302 October 8, 1965
Michoacan, Mexico.

In open oak woods in
the mts. about 2 miles west of
Zagana and 53 miles west of Morelia.
Elevation about 2800
Shrubs about 2 m.
tall. Leaves white,
mottled, about 8,
commonly 1.5 cm. long
and 1 cm. wide.

Montanoa atborescens (D.C.)

✓ Schultz Bip.

Montanoa (3)

10303 - October 1968

Michoacán, México.

Tall - *Equisetum* - some
rare, replanted to to
the small summit
6 or 7 miles east of
Morelia. Elevation about
6600. Plants annual.
Leaf scarlet to vermilion.
Involucre rather
light yellow.

Castilleja tenuifolia M. & G.
det. Noel H. Holmgren



Castilleja? (12)

10304 - October 9, 1965
Same place as 10303.
Same herbs with
clustered, leafy stems
mostly 1.5 - 2.5 m. tall.
Inflorance up to 3 or 4 dm.
wide. Heads yellow
with mostly 5 rays.

Senecio heracleifolius Hemsl.



Senecio heracleifolius (Hemsl.)

10305 - October 9, 1965
Michoacan, Mexico.
Northeast slope on
tall *Apuntia* savanna
(potential forest land)
at a low summit 6 or
7 miles east of Morelia.
Elevation about 6600'.
Flowers white

Cacalia (*Odontotrichum*)
sinuata Cerv. ✓

Cacalia 16 ✓

10306 - 25 Aug, 1965
Michoacan, Mexico

Tree - *Cupressus* (potential forest land) at
a low summit 6-7
miles east of Morelia.
Elevation about 6600
Stems clustered, or
occasionally solitary,
or a fibrous-rooted
crumb. Flowers green.

Stevia eupatoria (Spreng.)
Willd.

Stevia (7)

10307 - October 9, 1965

Michigan, Marquette.

Same place as 10306

Half-shrub about

1 m. tall. Flowers bright

lavender-blue.

Ageratum corymbosum

Zuccagn.



1008

Aster (15)

10368 - October 9, 1965
Michoacan, Mexico
On ~~an~~ steep moist
banks in oak-pine
forest region in the state
about 23 miles east of
Morelia. Elevation
about 7200. Rays 5,
white; disk yellow.

Sabazia humilis (H.B.K.)
Cass. ✓

Callesca (15)

10309 - October 9, 1965

Samplings 10308.

Plants are mostly herbaceous
or shrubby at the base.

Rays mostly about
8, white. Disk yellow.

Bidens pringlei Greenm

✓

✓

✓
✓

Bidens (10)

10375 - October 9, 1965
Michoacán, México

In moist woods dom-
inated by Pines and
Oaks, in the mts. 29
miles east of Morelia.
Elevation about 8500
Plant mostly herbaceous
or more often shrubby
below, the stems loosely
ascending, or ascending
or trailing at the base.
Fls. yellow, with
usually 5 (seldom 6) rays.

Bidens ostruthioides (DC.) Schultz Bip.
var. *ostruthioides* Scherff

Bidens (10) ✓

10311 - October 10, 1960
Michoacan, Mexico
Slope, open slopes and
banks in pine - fir
forest region in the
mtns. about 35 miles
east of Morelia. Eleva-
tion about 9400'.

Soft-wooded shrubs
up to about 1 m. tall.
Heads yellow, with
about 13 rays.

Senecio stoechodiformis DC.

✓✓

Senecio stoech. (6)

1902 - October 10 1865
Mexico, Guerrero
Disturbed site, in
Pine - fir forest region
in the mts. about 35 miles
east of Mexico. Elevation
about 9400'. Rays mostly
5, yellow, very short

Tagetes foetidissima DC.

✓ ✓

19312 - October 10, 1965

Michoacan, Mexico.

Taken along and cliff
creeks (volcanic rock)
in pine-fir forest
region in the mts., about
35 miles east of Morelia.
Elevation about 1400'.
Soft-wooded shrubs or
half-shrubs up to about
1 m. tall. Heads yellow,
with mostly 8 rays.

Coreopsis rudis

(Benth) Hemsl. ✓

12314 - October 12, 1965
Mexican, Mexico.

On steep banks and cliffs
(volcanic) in subtrop-
ical deciduous forest
region 7 miles southeast
of Ciudad Hidalgo, Sinaloa
State about 5900'.
Half shrubs up to about
2 m. tall. Rays rather
light yellow, commonly
8, sometimes 10, disk
yellow.

Simsia grayi Blake

✓

Simsia (12)

10315 - October 10, 1955
Michoacan, Mexico.

Openings in subtropical
deciduous forest country
7 miles southeast of
Ciudad Hidalgo. Elevation
about 5700'. Rather
soft-wooded shrubs up
to about 3 m. tall. Rays
white, mostly about 8.
Disk yellow. The large de-
tached leaves with some
specimens and from
vigorous young shoots.

Montanoa arborescens (DC.) Schultze

Montanoa (15) Bip.

10516 - October 10, 1961
Michoacan, Mexico,
Same place as 10314.
Rather soft - woody
shrubs up to about 3
m. tall. Heads yellow,
discoid or with 1 or 2
short rays.

Verbesina greenmanii Wb.
✓ vel aff.

Verbesina (?)

10315² - Oct. 11, 1965
Mexico, Mexico.

In the pedregal at the
south edge of Mexico
City a mile beyond
La Ciudad Universitaria
Elevation about 7600'.
Sparsely branched
shrubs about 1.5-2
m tall. Flowers pale
lavender

Lagascea rubra H.B.K.

no. (9)

10316 - October 11, 1965
Same place as 10315.
Plant annual. Flowers
white, faintly lavender-
tinged.

Florestina pedata
(Cav.) Cass.



Florestina (15)

1037 October 11, 1965

Same place as 1035

Shrubs 1-2 m. tall.

Ray white, mostly 5.

Disk white.

Montanoa floribunda ✓

(H.B.K.) Schultz Bip. ✓

Montanoa (12)

10315 October 11, 1965
Same place as 10313
Herbs about 2 m. tall,
the stems clustered on a
fibrous-rooted base.
Leaves appressed below,
alternate above. Heads
yellow, with mostly
10-13 rays.

Viguiera adenophylla Blake

1173
- *V. adenophylla* (Blake)

10319 - O-stolon 12, 1965

Medico, Medico

Same place as 10320

Disk yellow, Rays

white, rather short

0-5, the number varying

even on the same plant.

Cosmos parviflorus
(Jacq.) Pers.

1183

Bilens (15)

10320 - October 12, 1965
Mexico, Mexico
In disturbed sites
on mountain slopes
18 miles south of
Mexico City, near the
federal highway to
Guerrero. Elevation
about 8300'.
Heads yellow. Ray 18-31,
appressed.

(1) ✓ ✓
Heterotheca inuloides
Cass.

Heterotheca (1)

10371-2 to 1242

Medico, Medico

In low forest on mt.

Flowers 18 miles south
of Medico City, along
the free road to
Cuernavaca. Elevation
about 5500.

Weak half shrubs,
less than 1 m. tall.

Buds orange-red
or nearly scarlet.

Castilleja tenuiflora Benth.
det. Noel H. Holmgren

Castilleja (4)

✓✓

372 - October 1, 1965
Same place as 371.
Shrub about 1 m.
tall, flowers white.

Stevia nelsonii Robins.



1965

Stevia ③

18323 - Colima 12 mi.
Mexico, Mexico.
Moist, grassy swales
between the Colima -
Pasoanaca free highway
and cultivated fields,
near the summit of
the mts., about 24 miles
south of Mexico City.
Elevation about 9600'.
Stems clustered or solitary,
erect, fibrous-rooted
herbs, 1-2 m. tall. Heads
nodding, white.

Senecio brevistylus Klatt ✓

1221/ Perhaps better referred to

Cacalia (15) *Cacalia*

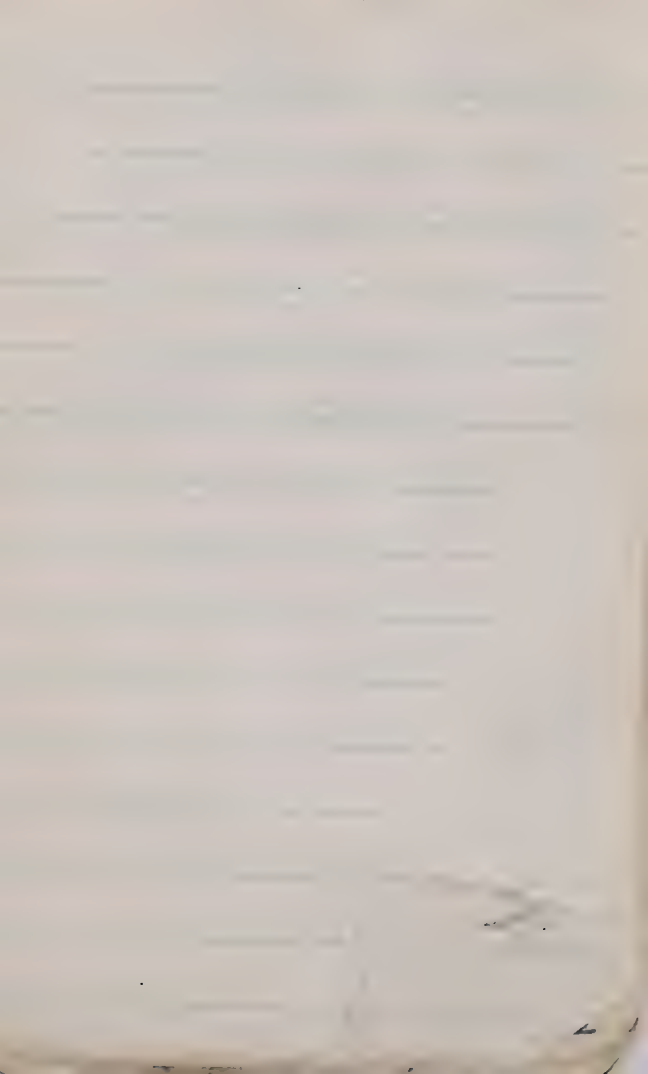
10324 - October 12, 1945
Mexico, Mexico,
in organic soil in grassy
savanna in podzol-
type volcanic terrain
near the summit of
the mts between Mexico
City, and Cuernavaca,
about 37 miles south
of Mexico City, elevation
about 7000 ft. Plants in
well developed scrub trail
system, rooting at the
the base of the
approximately 5 m. high.
videns anthemoides DC. ✓

10325 - *Sebania* *hirsuta*
Oct 12, 1900. In thin
sandy soil and
pedregal type volcanic
outcrops. - 5 in 10 in.
Rays 2-8, commonly 5
tender beneath, usually
white above.

Sebania humilis (H.B.K.)
Cass. ✓ ✓

1711

Sebania *hirsuta* (13)



Wm. W. W. W. W. W.

Much

100

30
10

WALLACE A. FRANKS

MISS

21

Tizapan el Alto	161.9
entre Michoacan	167.9 - 1.2.
Cohumatlan	176.5
Viga	82.2
Sahuayo	87.8
Jiquilpan full	92.0
collecting	218. ,
Zamora	7.2
collecting	28.0
San Juan	6.2
Morelia	16.7
total	11.2
San Juan	3.8
collecting	63.6

eddy full. 392.0

collecting 399.0

Zitcuaro 20. +

Parral	54.5
"jit. full	58.2
Villa Matamoros	72.0
Villa Ocampo	95.6
Las Niervas	302.8
unavright	324.8
Villa Hidalgo	333.7
Vigiera	348.2
La Zarca	361.5
Zinnia	69.65
Mapimi	419.2
Torreón	458
full	464
Cuencame	522
Verbanis	
Fran. mal	

Overhangs
collected

Zacatecas

Oct. 30 91 to 6.

0.

Villa Nueva

835.0

at collecting

842.1

Jalpa

892.

Polymnia

911.8

996.

Head

550'

15004.1

Top of barranca

Ex+lahuacan del Rio 027.

turn around

43.4

Full Vig.

47.2

Shonias

6400'

051.0

Head full

95.5

093.0

El Molino

22.9

